UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/851,918	05/09/2001	Andreas Berchtold	4100-261	3702

7590 12/27/2006

COHEN, PONTANI, LIEBERMAN & PAVANE
551 Fifth Avenue, Suite 1210
New York, NY 10176

EXAMINER	
THOMPSON, JAMES A	
ART UNIT	PAPER NUMBER
2625	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/27/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	09/851,918	BERCHTOLD ET AL.	
	Examiner	Art Unit	
	James A. Thompson	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 October 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-6,8-21,23,29 and 30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-6,8-21,23,29 and 30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 August 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 16 October 2006 has been entered.

Response to Arguments

2. Applicant's arguments filed 16 October 2006 have been fully considered but they are not persuasive. The limitations included by amendment to present claims 1 and 6 are in fact taught by the combination of Jansen (US Patent 6,108,436) and Hern (US Patent 5,546,859), as set forth in detail in the prior art rejection presented below.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 23 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 23 recites the limitation "scanning apparatus according to claim 22" in line 1. Claim 22 is cancelled. Thus, there is insufficient antecedent basis for this limitation in the claim. For the purpose of examining the claims over prior art, Examiner will assume that claim 23 depends from claim 21.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. **Claims 1, 3-4, 6 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jansen (US Patent 6,108,436) in view of Hern (US Patent 5,546,859).**

Regarding claim 1: Jansen discloses detecting, during a printing process (column 3, lines 29-38 of Jansen), a position of a reference object (figure 5a(21) and column 3, lines 61-63 of Jansen) on the printing medium (figure 3(8) and column 4, lines 18-20 of Jansen), the reference object being arranged ahead of the at least one measurement object (figure 5a(24) of Jansen) relative to a travel direction of the printing medium (column 3, lines 61-63 of Jansen); triggering, using the control electronics (figure 4(29) and column 4, lines 40-44 of Jansen), activation of said scanning apparatus with a predicted time-delay signal (offset) in response to detection of the reference object in said step of detecting a position of the reference object (column 5, lines 54-58 of Jansen), the time delay for said time-delay signal being functionally dependent on a predetermined distance between the reference object and the measurement object (figure 7(66,67) and column 6, lines 11-24 of Jansen); illuminating, in response to said step of triggering, the measurement object with a measurement light pulse from a flash exposure unit during a predetermined time period in a defined manner (figure 4(15,45) and column 4, line 65 to column 5, line 11 of Jansen); and scanning, in response to said step of triggering (column 4, lines 25-35 of Jansen), the at least one measurement object with at least one sensor (figure 3 and column 6, lines 54-60 of Jansen), said at least one sensor during the predetermined time period, said at least one sensor detecting information from the at least one measurement object indicating at least one of optical density and color or spectral values of the at least one measurement object (column 4, lines 10-17 of Jansen). Spectral values are determined by the sensor since the specific color, including support colors (column 3, lines 56-57 of Jansen), of each measurement object is determined to ensure that the appropriate color is at the appropriate position (column 4, lines 10-17 of Jansen). The spectral value measured is specifically the portion of the visible light spectrum represented by the measurement object.

Jansen does not disclose expressly detecting, using the angle measurement transmitter, an angle of rotation of the printing roll.

Hern discloses detecting, using the angle measurement transmitter (column 4, lines 54-59 of Hern), an angle of rotation of the printing roll (column 6, lines 6-16 of Hern).

Jansen is analogous art since Jansen is in the same field of endeavor as the present application, namely the control and correction of printing devices through the scanning and detection of reference objects. Jansen and Hern are combinable because they are from the same field of endeavor, namely the control and correction of digital image data apparatuses. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to detect an angular rotation of the roller when the

reference object is detected, as taught by Hern. The motivation for doing so would have been to track the location of regions (column 6, lines 13-16 of Hern), such as the initial reference marks (figure 5a(21) of Jansen) upon which location the locations of the reference marks are based (column 4, lines 6-11 of Jansen). Therefore, it would have been obvious to combine Hern with Jansen to obtain the invention as specified in claim 1.

Further regarding claim 3: Hern discloses measuring and storing, at an instant of detection of a reference object (column 4, lines 54-59 of Hern), a corresponding angle j of rotation of the roll (column 6, lines 6-16 of Hern).

Regarding claim 4: Jansen discloses that the measurement object is scanned when the roll has rotated a specific increment (column 4, lines 11-17 of Jansen).

Jansen does not disclose expressly calculating an angle-of-rotation increment based on a diameter of the roll, the measured angle j of rotation, and a predetermined distance running in a printing medium transport direction between the reference object and the measurement object, said step of scanning being performed when the roll has rotated the angle increment.

Hern discloses calculating an angle-of-rotation increment based on a diameter of the roll (column 5, lines 50-57 of Hern), the measured angle j of rotation (column 5, lines 50-54 and column 6, lines 6-13 of Hern), and a predetermined distance (d_2) running in a printing medium transport direction between the reference object and the measurement object (column 5, lines 50-54 of Hern), the measurement object being marked when the roll has rotated the angle increment (column 6, lines 9-13 of Hern).

Jansen is analogous art since Jansen is in the same field of endeavor as the present application, namely the control and correction of printing devices through the scanning and detection of reference objects. Jansen and Hern are combinable because they are from the same field of endeavor, namely the control and correction of digital image data apparatuses. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to calculate an angle-of-rotation increment, as taught by Hern, and perform an image processing operation when the roll has rotated said angle increment, as also taught by Hern, said image processing operation being scanning at a specified increment, as taught by Jansen. The motivation for doing so would have been to track the location of regions (column 6, lines 13-16 of Hern), such as the initial reference marks (figure 5a(21) of Jansen) upon which location the locations of the reference marks are based (column 4, lines 6-11 of Jansen). Therefore, it would have been obvious to combine Hern with Jansen to obtain the invention as specified in claim 4.

Regarding claim 6: Jansen discloses a scanning apparatus (figure 3 and figure 4 of Jansen) comprising control electronics (figure 4(29) and column 4, lines 40-44 of Jansen) triggering activation of

said scanning apparatus with a predicted time-delay signal (offset) (column 5, lines 54-58 of Jansen), the time delay for said time-delay signal being functionally dependent on a predetermined distance between the reference object and the measurement object (figure 7(66,67) and column 6, lines 11-24 of Jansen); a flash exposure unit (figure 4(15,45) of Jansen) for illuminating the measurement object with a measurement light pulse during a predetermined time period of a printing process in a defined manner (column 4, line 65 to column 5, line 11 of Jansen); and a sensor device (figure 4 and column 2, lines 55-61 of Jansen) including a plurality of measurement heads arranged in a printing machine (figure 3(14); column 4, lines 36-38; and column 7, lines 14-16 of Jansen), at least one of said measurement heads being operative to detect said reference object (column 4, lines 32-35 of Jansen) during the printing process (column 3, lines 29-38 of Jansen), remainder ones of said measurement heads being activatable in response to said control electronics to detect and scan said at least one measurement object (column 3, lines 61-63 and column 4, lines 11-17 of Jansen) during the predetermined time period (column 3, lines 29-38 and column 5, lines 5-11 of Jansen), said remainder ones of measurement heads being activated by said control electronics responsive to said reference object detection (column 4, lines 11-17 of Jansen) and being arranged and dimensioned for detecting information from the at least one measurement object indicating at least one of optical density and color or spectral values of said at least one measurement object (column 4, lines 10-17 of Jansen). The red reference mark (figure 5a(21) of Jansen) is first detected and measured (column 4, lines 32-35 of Jansen) and used to determine the locations of the other marks (column 3, lines 61-63 of Jansen), which are measured in response to the detection of said red reference mark (column 4, lines 11-17 of Jansen). Separate measurement heads can be used for each color (column 7, lines 14-16 of Jansen). Spectral values are determined by the sensor since the specific color, including support colors (column 3, lines 56-57 of Jansen), of each measurement object is determined to ensure that the appropriate color is at the appropriate position (column 4, lines 10-17 of Jansen). The spectral value measured is specifically the portion of the visible light spectrum represented by the measurement object.

Jansen does not disclose expressly an angle measurement transmitter on the printing roll for detecting an angle of rotation of said printing roll, said transmitter being electrically operatively connected to said apparatus.

Hern discloses an angle measurement transmitter on the printing roll (column 4, lines 54-59 of Hern) for detecting an angle of rotation of the printing roll, said transmitter being electrically operatively connected to said apparatus (column 6, lines 6-16 of Hern).

Jansen is analogous art since Jansen is in the same field of endeavor as the present application, namely the control and correction of printing devices through the scanning and detection of reference objects. Jansen and Hern are combinable because they are from the same field of endeavor, namely the control and correction of digital image data apparatuses. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to detect an angular rotation of the roller when the reference object is detected, as taught by Hern. The motivation for doing so would have been to track the location of regions (column 6, lines 13-16 of Hern), such as the initial reference marks (figure 5a(21) of Jansen) upon which location the locations of the reference marks are based (column 4, lines 6-11 of Jansen). Therefore, it would have been obvious to combine Hern with Jansen to obtain the invention as specified in claim 6.

Further regarding claim 29: Hern discloses measuring the passage of said distance using the angle measurement transmitter (column 6, lines 6-16 of Hern).

7. **Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jansen (US Patent 6,108,436) in view of Hern (US Patent 6,108,436) and Magde (US Patent 5,363,174).**

Regarding claim 5: Jansen discloses that scanning is triggered in accordance with a predetermined distance running in a printing medium transport direction between the reference object and the measurement object (column 4, lines 11-17 of Jansen). A printing press moves at a particular speed and, as is well-known, $\text{time} = \frac{\text{distance}}{\text{speed}}$. Therefore, it is inherent that said scanning is activated with a time delay relative to an instant of detection of the reference object, since a delay based on a predetermined distance is the same as a delay based on a predetermined time in the case of a constant speed printing press.

Jansen in view of Hern does not disclose expressly that said scanning is activated with a time delay, and is triggered in accordance with a currently determined printing medium speed and a predetermined distance.

Magde discloses triggering a scanning operation with a time delay in accordance with a currently determined printing medium speed and a predetermined distance (column 9, lines 17-21 of Magde). Again, since $\text{time} = \frac{\text{distance}}{\text{speed}}$, the currently determined speed is inherent since the time delay required for a particular distance could not be known otherwise.

Jansen in view of Hern is combinable with Magde because they are from the same field of endeavor, namely the control and correction of digital image data apparatuses. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to base the scanning

operations taught by Jansen on a currently determined print speed and a predetermined distance, as taught by Magde. The suggestion for doing so would have been a time interval can correlate to an equivalent distance interval (column 9, lines 17-21 of Magde). Therefore, it would have been obvious to combine Magde with Jansen in view of Hern to obtain the invention as specified in claim 5.

8. **Claims 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jansen (US Patent 6,108,436) in view of Hern (US Patent 6,108,436) and Mamizuka (US Patent 6,061,144).**

Regarding claim 8: Jansen in view of Hern does not disclose expressly that said measurement strip includes a linearly arranged chain of measurement fields thereon, said measurement fields having specific color density values.

Mamizuka discloses that said measurement strip includes a linearly arranged chain of measurement fields thereon (column 10, lines 4-6 of Mamizuka), said measurement fields having specific color density values (column 10, lines 6-13 of Mamizuka).

Jansen in view of Hern is combinable with Mamizuka because they are from the same field of endeavor, namely the correction of digital image data processing apparatuses. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use a linearly arranged chain of measurement fields having specific color density values, as taught by Mamizuka, for the reference and measurement objects taught by Jansen. The motivation for doing so would have been to correct for a set of gradations corresponding to a desired gamma function (column 5, lines 13-22 of Mamizuka), thus providing a better output result. Therefore, it would have been obvious to combine Mamizuka with Jansen in view of Hern to obtain the invention as specified in claim 8.

Regarding claim 9: Jansen discloses that, for detection and scanning purposes, each measurement head of said plurality of measurement heads is associated with at least one measurement section (column 4, lines 18-20 and column 7, lines 14-16 of Jansen), said at least one measurement section includes at least on of said measurement fields (figure 5a(22-26) and column 4, lines 11-17 of Jansen).

9. **Claims 10-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jansen (US Patent 6,108,436) in view of Hern (US Patent 6,108,436), Mamizuka (US Patent 6,061,144), and Sasanuma (US Patent 5,856,876).**

Further regarding claim 10: Mamizuka discloses that each said at least one measurement section comprises two adjacent measurement zones (figure 4(46(Bk)) of Mamizuka). The set of four light

patches and the set of four dark patches for any of the colors shown in figure 4 of Mamizuka can be considered two separate measurement zones.

Jansen in view of Hern and Mamizuka does not disclose expressly that said measurement zones are spaced apart and intervened by a narrow track.

Sasanuma discloses separating measurement zones with a narrow track (column 10, lines 1-5 of Sasanuma), as can clearly be seen in figure 5 of Sasanuma.

Jansen in view of Hern and Mamizuka is combinable with Sasanuma because they are from the same field of endeavor, namely digital image data processing and correction. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to space apart two sets of the density patches taught by Mamizuka with a narrow track, as taught by Sasanuma, thus creating two adjacent measurement zones. The motivation for doing so would have been that overlapping would adversely affect the results when the correction test patterns are read (column 10, lines 1-5 of Sasanuma) and a narrow track between measurement zones would clearly help mitigate this problem. Therefore, it would have been obvious to combine Sasanuma with Jansen in view of Hern and Mamizuka to obtain the invention as specified in claim 10.

Regarding claim 11: Jansen discloses that said measurement zones each have identically recurring sequences of color density values (column 3, lines 48-50 of Jansen).

Regarding claims 12 and 13: Jansen discloses that each of said measurement zones has measurement fields of a same longitudinal dimension (column 4, lines 9-11 of Jansen). Each measurement field (figure 5a(22-26) of Jansen) is 0.2x0.2 mm (column 4, lines 9-11 of Jansen).

Further regarding claim 14: As discussed above in the arguments regarding claim 10, the set of four light patches and the set of four dark patches for any of the colors shown in figure 4 of Mamizuka can be considered two separate measurement zones. Therefore, each of said measurement zones includes a common number of measurement fields.

Further regarding claim 15: Mamizuka discloses that each of said measurement zones has at least one minimum and one maximum color density value (column 10, lines 10-13 of Mamizuka).

Regarding claim 16: Jansen discloses that said reference object comprises at least one of said measurement fields (figure 5a(21) and column 3, lines 61-63 of Jansen).

10. Claims 17-21 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jansen (US Patent 6,108,436) in view of Hern (US Patent 6,108,436), Mamizuka (US Patent 6,061,144), and Toyofuku (US Patent 5,289,000).

Regarding claim 17: Jansen discloses that a separate measurement head is used for each color (column 7, lines 14-16 of Jansen).

Jansen in view of Hern does not disclose expressly that said measurement heads are arranged one after another along said coordinate direction, said measurement heads being movable along said coordinate direction.

Mamizuka discloses that measurement fields are arranged one after another along said coordinate direction (figure 4 and column 10, lines 6-12 of Mamizuka).

Jansen in view of Hern is combinable with Mamizuka because they are from the same field of endeavor, namely the correction of digital image data processing apparatuses. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use arrange the measurement fields as taught by Mamizuka, thus requiring that the measurement heads taught by Jansen are arranged one after another along said coordinate direction in order to read said measurement fields. The motivation for doing so would have been that such an arrangement of measurement fields allows for the correction of a set of gradations corresponding to a desired gamma function (column 5, lines 13-22 of Mamizuka). Therefore, it would have been obvious to combine Mamizuka with Jansen in view of Hern.

Jansen in view of Hern and Mamizuka does not disclose expressly that the measurement heads being movable along said coordinate direction.

Toyofuku discloses moving a measurement head (figure 2(35) of Toyofuku) along a particular coordinate direction (column 7, line 68 to column 8, line 8 of Toyofuku).

Jansen in view of Hern and Mamizuka is combinable with Toyofuku because they are from the same field of endeavor, namely the correction of digital image data processing apparatuses. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to move the measurement heads in a predetermined direction, as taught by Toyofuku, said predetermined direction being the coordinate direction of the measurement fields taught by Mamizuka. The motivation for doing so would have been to move the measurement heads to a position in which said measurement heads can properly read the image data (column 7, lines 59-63 and column 8, lines 4-8 of Toyofuku). Therefore, it would have been obvious to combine Toyofuku with Jansen in view of Hern and Mamizuka to obtain the invention as specified in claim 17.

Regarding claim 18: Jansen discloses that said apparatus is disposed above a printing machine roll (figure 3 of Jansen), said printing medium being carried on said roll (figure 1(7) and column 3, lines 15-22 of Jansen). As can clearly be seen in figure 3 of Jansen, the apparatus is disposed above the printing machine paper (figure 3(8) of Jansen), taken from the printing machine roll (figure 1(7) of Jansen). Further, as can clearly be seen in figure 2 of Jansen, the apparatus (figure 2(12a-12d) of Jansen) is disposed above the printing machine rollers (figure 2(6a-6d) of Jansen) which are disposed above the printing machine roll (figure 1(7) of Jansen).

Further regarding claims 19 and 20: Toyofuku discloses a slide device (figure 2(90) of Toyofuku), said measurement heads being carried on said slide device (column 8, lines 24-28 of Toyofuku), said slide device being movable translationally along a particular coordinate direction (column 7, line 68 to column 8, line 5 of Toyofuku). As discussed in the arguments regarding claim 17, upon which claims 19 and 20 are dependent, the combination of Toyofuku with Jansen in view of Hern and Mamizuka provides that said predetermined direction of Toyofuku is the coordinate direction of the measurement fields taught by Mamizuka.

Regarding claim 21: Jansen discloses that a separate measurement head is used for each color (column 7, lines 14-16 of Jansen) and each measurement head scans a measurement section associated with said each measurement head (column 4, lines 11-17 of Jansen).

Jansen in view of Hern does not disclose expressly that the associated measurement section scanned by each measurement head is a measurement section of said measurement strip, and is scanned in progressive time with slide device translational movement.

Mamizuka discloses that each measurement section is a measurement section of a measurement strip (figure 4(46(Bk)) and column 10, lines 16-21 of Mamizuka).

Jansen in view of Hern is combinable with Mamizuka because they are from the same field of endeavor, namely the correction of digital image data processing apparatuses. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the measurement strips taught by Mamizuka for organizing the measurement objects taught by Jansen. The motivation for doing so would have been to correct for a set of gradations corresponding to a desired gamma function (column 5, lines 13-22 of Mamizuka). Therefore, it would have been obvious to combine Mamizuka with Jansen in view of Hern.

Jansen in view of Hern and Mamizuka does not disclose expressly that said scanning is performed in progressive time with slide device translational movement.

Toyofuku discloses scanning in progressive time with slide device translational movement (column 8, lines 4-8 of Toyofuku).

Jansen in view of Hern and Mamizuka is combinable with Toyofuku because they are from the same field of endeavor, namely the correction of digital image data processing apparatuses. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to progressively scan as taught by Toyofuku. The motivation for doing so would have been to keep an equal light path length to the CCD (column 8, lines 6-8 of Toyofuku) and thus obtain a proper reading with the CCD. Therefore, it would have been obvious to combine Toyofuku with Jansen in view of Hern and Mamizuka to obtain the invention as specified in claim 21.

Regarding claim 23: Jansen discloses a control electronics unit (figure 4(37) and column 4, lines 40-44 of Jansen), said control electronics unit being operative to trigger activation of apparatus scanning when a predicted time-delay (offset) relative to a time at said detection is reached (column 5, lines 54-58 and column 6, lines 11-20 of Jansen), the predicted time-delay corresponding to the predetermined distance (figure 5a(d1) and column 32-38 of Jansen).

Jansen does not disclose expressly that said control electronics unit triggers activation of apparatus scanning when a predicted angle-of-rotation increment relative to said angle of rotation at said detection is reached.

Hern discloses detecting a current angle of rotation of said printing roll at detection of said reference object (gap) (column 6, lines 6-13 of Hern) and triggering activation of apparatus marking when a predicted angle-of-rotation increment relative to said angle of rotation at said detection is reached (column 6, lines 9-13 of Hern).

Jansen is analogous art since Jansen is in the same field of endeavor as the present application, namely the control and correction of printing devices through the scanning and detection of reference objects. Jansen and Hern are combinable because they are from the same field of endeavor, namely the control and correction of digital image data printing presses. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to calculate an angle-of-rotation increment, as taught by Hern, and perform an image processing operation when the roll has rotated said angle increment, as also taught by Hern, said angle of rotation increment corresponding to the time delay taught by Jansen. The motivation for doing so would have been to track the location of regions (column 6, lines 13-16 of Hern), such as the initial reference marks (figure 5a(21) of Jansen) upon which location the locations of the reference marks are based (column 4, lines 6-11 of Jansen). Therefore, it would have been obvious to combine Hern with Jansen to obtain the invention as specified in claim 23.

11. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jansen (US Patent 6,108,436) in view of Hern (US Patent 6,108,436) and Toyofuku (US Patent 5,289,000).

Regarding claim 30: Jansen discloses that the plurality of measurement objects to be scanned are set in a transverse direction with respect to the travel direction of the printing medium (figure 5b and column 4, lines 6-10 and lines 32-35 of Jansen); and that the movement of the at least one sensor means is activated responsive to a detection of the reference object (column 3, lines 61-63 and column 4, lines 11-17 of Jansen).

Jansen in view of Hern does not disclose expressly moving the at least one sensor in a translational movement transverse to a travel direction of the printing medium to scan the at least one measurement object.

Toyofuku discloses moving a measurement head (figure 2(35) of Toyofuku) along a particular coordinate direction (column 7, line 68 to column 8, line 8 of Toyofuku).

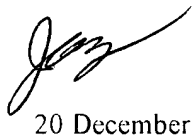
Jansen in view of Hern is combinable with Toyofuku because they are from the same field of endeavor, namely the control and correction of digital image data apparatuses. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to move the at least one sensor taught by Jansen in a translational movement for scanning, as taught by Toyofuku. By combination with Jansen, the translational movement taught by Toyofuku would be in a direction transverse to the travel direction of the printing medium to scan the at least one measurement object, since the measurement objects are placed in directions that are transverse to each other. The motivation for doing so would have been to maintain an equal light path length for the measurement devices (column 7, lines 59-63 and column 8, lines 4-8 of Toyofuku), since maintaining an equal light path length provides more consistent results than simply measuring with a static measuring device. An additional motivation for doing so would have been that translating the measurement devices such that said measurement devices are placed directly over the reference objects would allow the measurement devices to consistently measure the same type of measurement object, thus providing consistent results from which to better calibrate a printing apparatus. Two different measurement devices often provide somewhat different results. Thus, consistent measurements using the same measurement devices for the same corresponding measurement objects will provide more consistent calibration results. Therefore, it would have been obvious to combine Toyofuku with Jansen in view of Hern to obtain the invention as specified in claim 30.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Thompson whose telephone number is 571-272-7441. The examiner can normally be reached on 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K. Moore can be reached on 571-272-7437. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



20 December 2006

James A. Thompson
Examiner
Technology Division 2625

KING Y. POON
PRIMARY EXAMINER